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OUTLOOK ISSUE

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The Insect Situation in 1968

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FOR A LOOK at the insect situation in 1968 let's first review what happened in 1967 and then take off on a speculative forecast for the coming year.

Field Crop Pests

Last winter was mild and dry, followed by continued dry weather in April and May. Entomologists and wildlife specialists got reports of severe mouse damage to planted, unsprouted corn and to seedling corn from half the counties in Iowa.

In Story County, one 200-acre field was replanted because of extensive damage by the white-footed mouse. Adjacent fields showed stand losses of 15 to 25 percent due to mice throughout whole fields. Mice were hiding in cracks in the ground out in the middle of fields. In Monona County, an airplane was used to broadcast 4 pounds of strychnine-poisoned corn per acre on 300 acres of bottom land. The treatment was successful.

Why did we have a mouse outbreak? No one can be certain. Farmers blamed the dry weather. One man pointed out that in an "average" spring, heavy rains would drown out many mouse litters and make conditions unpleasant for the rest. Last year we didn't have the rain. It could happen again in 1968.

Mice (meadow, pine and white-footed) have a high reproductive potential and, given the same favorable conditions, we could have high populations. All we can suggest is that you watch fencerows

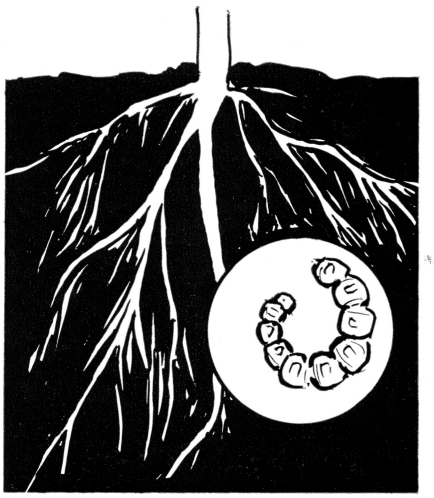
and field edges at planting time. If damage shows up, spread poisoned bait.

In June it began to rain. Rootworm insecticides broke down or washed away. Rootworm hatch was 7 to 10 days later than in 1966 (when rootworm activity was 2 weeks later than average). Many farmers had disappointing experiences in 1966 with rootworm insecticides applied at planting time. In 1967 they were prepared to make cultivator applications, but it rained and rained.

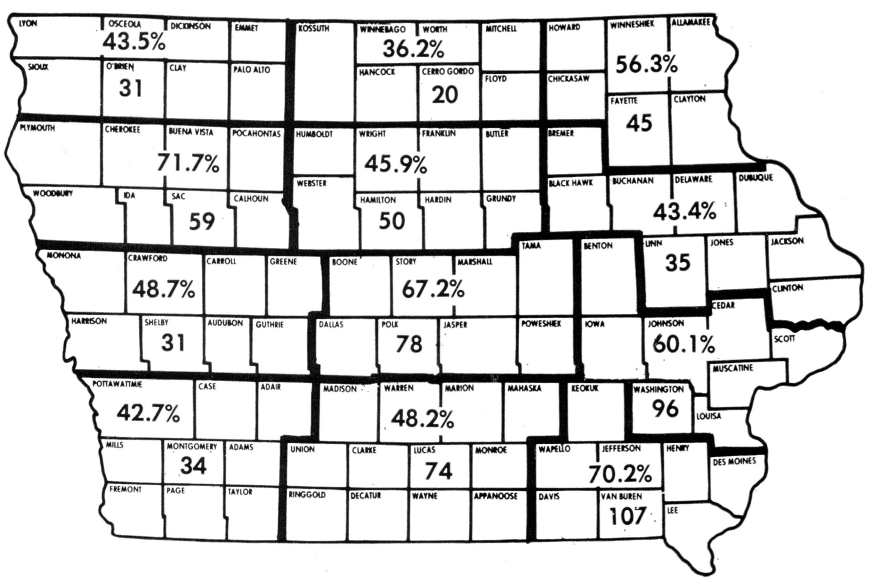
By the time fields were dry, a few were so tall farmers couldn't cultivate. As a result, some fields suffered severe rootworm damage. In one case in Shelby County, corn 5½ feet tall had so few roots left (70 rootworms per plant), the farmer made a cultivator application of a rootworm insecticide simply by pushing the corn over in the row. The treatment was successful and the farmer harvested 75 bushels per acre from the field An untreated check plot yielded 5 bushels per acre.

Damage from the western corn rootworm was observed in every county, including those along the Mississippi River. Fall weather was favorable for egg laying by adult beetles, and a severe potential threat exists throughout Iowa for 1968 where corn must follow corn.

Research results and observations by County Extension Directors in 1967 emphasized the variation in effectiveness of the different organic phosphorus and carbamate insecticides used to control western corn rootworms. Under the difficult weather conditions of 1967 some of these chemicals failed consistently.



Results, Fall Corn Borer Survey—1967



Top figure: Percent of plants infested. Lower figure: Borers per 100 plants. 1967 state average: plants infested, 52.8%; 55.0 borers. 1966 state average: plants infested, 71.2%; 146.3 borers.

Iowa Rootworm Control in 1968

Our advice to the corn farmer for 1968: seriously consider the possibilities of rotation. We know that corn rootworms do not cause economic damage to crops other than corn. When you add up the costs of insecticide and the chances of failure with any of them, you may be able to realize as much net income with less worry from soybeans, oats or grain sorghum with good management. Research at the U.S. Department of Agriculture's Northern Grain Insects Laboratory at Brookings, S.D., indicates northern and western corn rootworms can develop in small numbers on the roots of yellow and green foxtail. We do not feel that these are important sources of rootworm beetles, however.

If you used Atrazine in a weed rescue operation in 1967, residues of this herbicide could damage soybeans and oats in 1968. In this situation, you are almost forced to go back to corn in 1968. Therefore, we suggest you:

1. Spend some time studying the 1966 Corn Yield Test Bulletin. List the varieties adapted to your area which showed the *least* root lodging. Then visit with your neighbors, your County Extension Director, vocational agriculture instructor and others to find out which of these appear to stand up best under rootworm infestation. Plant these.

2. On corn following corn, apply preferably 1 pound actual Bux 10 or phorate (Thimet) or diazinon per 13,080 linear feet of corn row in a 7-inch band lightly incorporated in the soil.

3. Before the corn is too tall to go through with a cultivator, dig corn roots from *all* your corn fields at least 25 steps in from the edge of the fields. Examine these roots carefully for rootworms and root feeding. If you find 10 or more rootworms per plant or if 50 percent of the roots show the brown discolorations from rootworm feeding, regardless of planter treatment, apply diazinon, phorate (Thimet) or parathion granules (1 pound actual per acre). Apply the chemical over

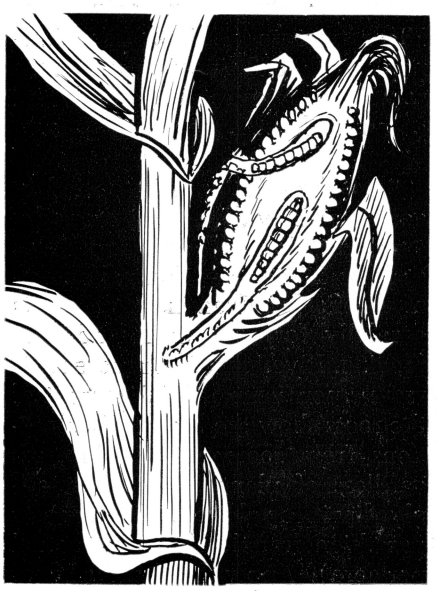
the row to kill some first-brood corn borers. Use hillers or sweeps to cover the insecticide which falls through to the ground.

4. When tassels emerge, check the fields daily for rootworm beetles. If you aren't sure you recognize the beetles, check with your County Extension Director, vocational agriculture instructor or agchemical supplier.

If silk feeding is obvious and polination is not yet complete, with 15 to 20 beetles feeding in the tip of each ear, *don't hesitate.* Treat at once by airplane or high clearance sprayer. Carbaryl (Sevin) as a spray at 1 pound actual per acre kills rootworm beetles for 8 to 10 days after application. Malathion applied by ground rig at 1 pound per acre and diazinon by air or ground at ½ pound per acre will kill beetles for 3 days after application. Low volume malathion (4 ounces per acre) by airplane will kill beetles for 4 or 5 days.

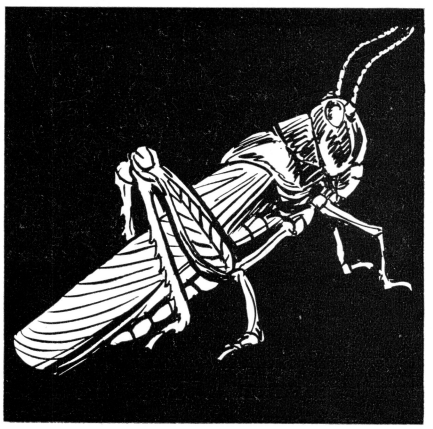
The European corn borer didn't do so well in 1967. This may have been due partly to unfavorable weather during egg-laying time and to the increase in acres treated—500,000 acres treated for combination rootworm-first-brood corn borer control and perhaps 100,000 acres treated for second-brood corn borers.

The annual fall survey showed the lowest population of corn borers since 1959. (See map.) Picking, disking, and plowing will further reduce overwintering borer numbers. Predation by birds and mice during the winter will also cut back on potential moths next spring.



In view of the expected small first-brood of corn borers in 1968, we suggest you aim cultivator applications toward rootworms. Apply the insecticide earlier than you would if overwintered borer numbers were high.

Grasshoppers could be a problem in southeast and northwest Iowa if we have dry weather in May, June and July, or if it's cool in May and June, with hot dry weather in July and August. Be ready to treat fencerows and outside rows of



crops with carbaryl (Sevin), diazinon or malathion. Saving one row of corn or beans will pay for the spray.

The alfalfa weevil was found in Lee, Des Moines, Muscatine, Scott and Clinton Counties in 1967. Numbers are quite low and we don't expect obvious damage before 1969. There is one brood each year. The adult weevils live through the winter. Primary damage is to the first cutting of hay.

Livestock Insects

Cattle Grubs

Records kept by Iowa packing companies during the winter of 1967 showed another decrease in the percentage of grubby cattle. This is a direct result of more cattle being treated with systemic insecticides. The Iowa livestock industry can be proud of the cattle grub control effort by cattle feeders.

Early indications show that even more cattle than in previous years were treated for grubs in the late summer and fall of 1967. Treatments included Neguvon, Ruelene and Co-Ral as pour-ons and sprays, and ronnel as a feed-additive.

Packers will continue to report the percentage of grubby cattle slaughtered during the winter of 1968, to evaluate grub control efforts.

Biting Flies

Although the cool dry May delayed the appearance of the annoying stable fly in feedlots, it again was the most troublesome fly to livestock producers. This hard to kill fly has to be controlled by sanitation and long-lasting residual sprays like Baytex or Cygon applied to fly resting areas. Apparently because the losses caused by this blood-sucking pest are hard to measure or see, inadequate or no control practices are used in otherwise well-managed cattle feeding operations. Residual spray applications should be started in June before fly populations become established.

The pasture-breeding, blood-sucking horn fly reached annoying levels by late June on untreated herds. This fly continues to be readily controlled by insecticide sprays, back-rubber formulations and low-level feed additives. It should not be a problem in well-managed herds in 1968.

Face Fly

Perhaps the most promising area of livestock fly control was observed where dust bags were used for face fly control. Observations were made on one experimental and one labeled material. The method simply involves hanging a bag containing an insecticide-treated dust so the animals can butt it with their heads.

Younger animals and bulls tend to play with the bags, keeping their heads well-dusted with insecticides. In order to be effective on older animals, the bags must be hung in gates or lanes where animals were forced to pass under them daily. Where animals receive a daily application of dust, preliminary observations indicate effective face fly control.